**TALLINN UNIVERSITY OF TECHNOLOGY**

Faculty of Information Technology

Department of Computer Engineering

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**IAX0583 Programming 1**

**Calculating function y=f(x)**

Homework 1

**Supervisors**

Ethan…

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**Integrated Engineering**

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**Declaration of originality:**

I hereby certify that I am the sole author off this thesis and no part of this thesis has been published or submitted for publication. All works and major viewpoints of the other authors, data from other sources of literature and elsewhere used for writing this paper have been referenced.

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**Method**

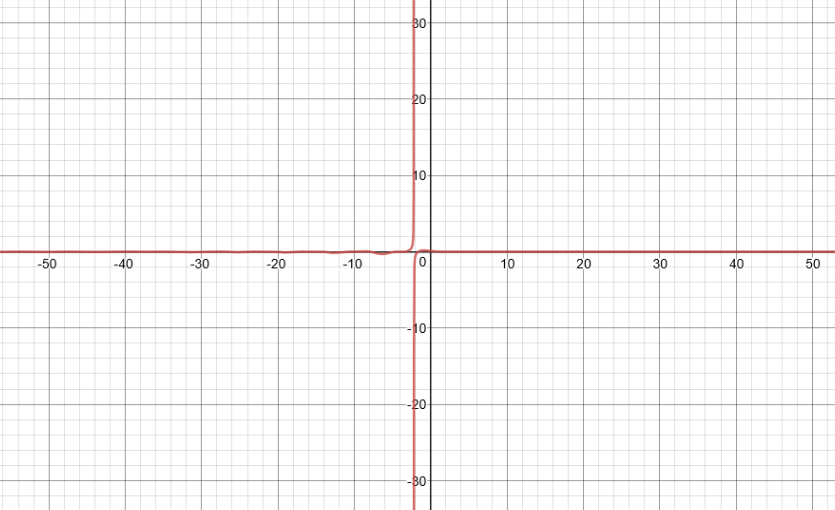
**7.** User inputs a starting value A, step H and the lower limit of function value YM.   
The following conditions have to be true: H > 0.  
The function value y will be calculated in the following points:  
A  
A + H  
A + 2H  
A + 3H  
while the condition y > YM holds true, however not more than 15 times.

**Function**

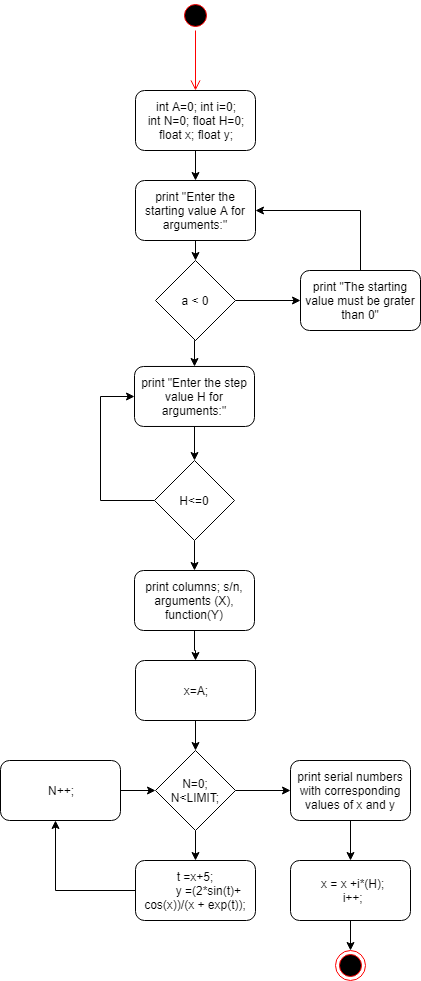
14.*y* **=** sin2(*x*+5)+cos*x*

*x + ex+3*

**THE GRAPH:**

****

**THE ALGORITHM:**

****

**Explanation of the program:**

This program is meant to read an input from the user and checking its validity according to the conditions required. Then increasing this input by certain amount defined through the mathematical series:

**X = A + (n-1)\*H**

**Where:**

**A**: is the previous value of x entered by the user.

**N**: is the maximum number of steps entered by the user.

**H**: is the step value entered by the user.

**X**: is the new input.

Then every time we calculate a new value of x, we input it in the following function:

**Y = (sin2(x + 5) + cos x)/x + ex + 3)**

Then the result is displayed for the user.

We keep repeating the loop until the value of step input(x) reaches the LIMIT 15.

The variables used:

**A:** starting value.

**H:** step value.

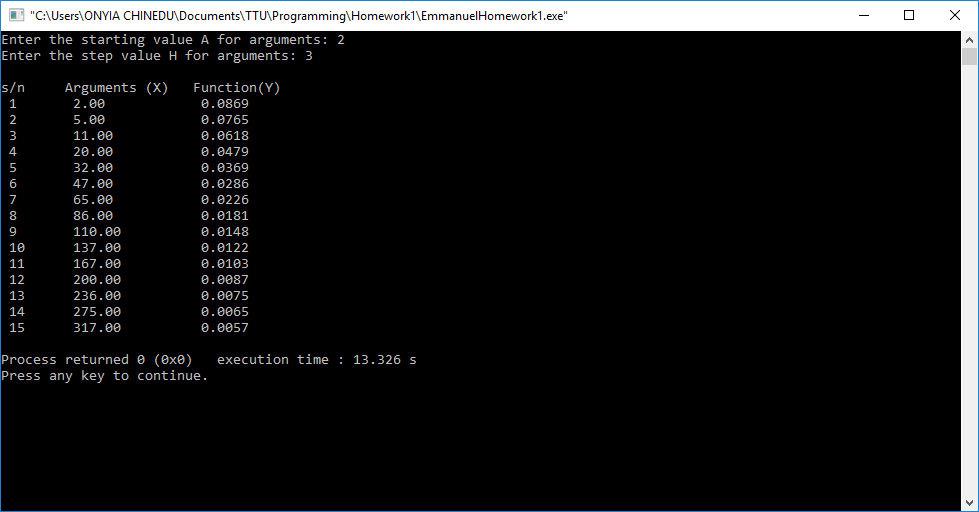
**Y:** the result of the function.

**X:** the new value of A for each step.

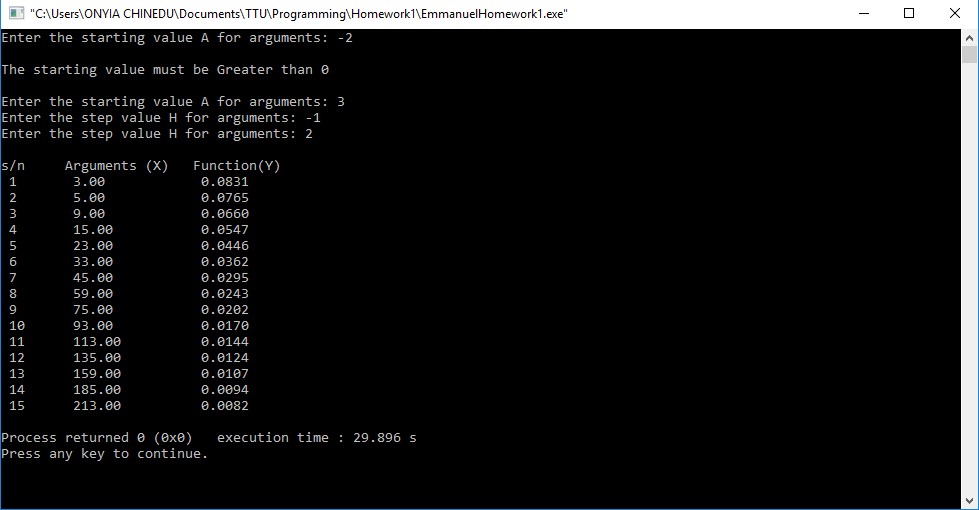
**Conditions that had to be met:**

1. A>0.
2. H>0.

**OUTPUT:**



\*Program output with correct values input.\*



\*Program output with incorrect user inputs.\*